

ABSTRACT
A METHOD OF LOGGING A BOREHOLE

In the field of wellbore data logging it is known to use isotopic neutron sources in a neutron capture logging technique. However, continuous isotopic sources are unpopular for regulatory and safety reasons.

Attempts to employ neutron generator tubes to generate neutron bursts for use in the neutron capture technique have encountered various difficulties in areas connected with signal identification and processing.

The disclosure relates to a method of data logging in which a low burst rate neutron generator tube is pulsed at comparatively low rates to generate neutron bursts that are captured in atomic nuclei in a proximal formation. The gamma radiation arising from the neutron capture is detected over a gating intervals defined by temporally distinct points. The gamma detector output is integrated over the gating interval to provide a measure of the decay rate that is independent of the pulse rate. Consequently the signal processing problems do not arise.

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(Figure 1)